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AMSAT NEWS SERVICE
ANS-051

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

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ANS-051 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2022 Feb 20

ARISS Europe to Perform Special Digital SSTV Experiment

Amateur Radio on the International Space Station (ARISS) is planning for a special SSTV experiment. ARISS is the group that puts together special amateur radio contacts between students around the globe and crew members with ham radio licenses on the International Space Station (ISS) and develops and operates the amateur radio equipment on ISS.

As part of its ARISS 2.0 initiative, the ARISS International team is expanding its educational and life-long learning opportunities for youth and ham radio operators around the world. ARISS Slow Scan Television (SSTV), which is the transmission of images from ISS using amateur radio, is a very popular ARISS mode of operation. To expand ARISS SSTV

capabilities, the ARISS Europe and ARISS USA teams plan to perform special SSTV Experiments using a new SSTV digital coding scheme. For the signal reception, the software "KG-STV" is required, as available on internet.

We kindly request that the amateur radio community refrain from the use of the voice repeater thin this SSTV experiment on 20th of February 2022 over Europe.

This is a unique and official ARISS experiment. We kindly request keeping the voice repeater uplink free from other voice transmissions during the experiment time period. Also note that ARISS is temporarily employing the voice repeater to expedite these experiments and make a more permanent, more expansive SSTV capability fully operational on other downlink frequencies.

The first experiment in the series will utilize ARISS approved ground stations in Europe that will transmit these digital SSTV signals. These will be available for all in the ISS footprint when SSTV transmissions occur. The first SSTV experiment is planned for 20 February 2022 between 05:10 UTC and 12:00 UTC for five ISS passes over Europe. Please be aware that this event depends on ARISS IORS radio availabilities and ISS crew support, so last-minute changes may occur.

To promote quick experimental SSTV investigations--to learn and improve--the ARISS team will employ the ISS Kenwood radio in its cross-band repeater mode. The crossband repeater operates on a downlink of 437.800 MHz. Each transmission sequence will consist of 1:40 minute transmission, followed by 1:20 minute pause and will be repeated several times within an ISS pass over Europe.

The used modulation is MSK w/o error correction. For the decoding of the 320 x 240 px image, the software KG-STV is required. The KG-STV software can be downloaded from the following link: " http://amsat-nl.org/wordpress/wp-content/uploads/2022/02/kgstv_ISS.zip"

The ZIP file contains the KG-STV program, an installation and setup manual, some images and MP3 audio samples for your first tests as well as links for additional technical information about the KG-STV use.

The members of the ham radio community youth and the public are invited to receive and decode these special SSTV signals.

Experiment reports are welcome and should be uploaded to " sstvtest(a)amsat-on.be" More information will be available on the AMSAT-NL.org web page: "https://amsat-nl.org/?page_id=568"

[ANS thanks ARISS Team Member Oliver Amend, DG6BCE for the above information]

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The transmitter was autonomously activated around 04:47 UTC and the first signals were received and decoded a few minutes later by KB6LTY and within a few hours more than 250 stations around the world had submitted telemetry reports to the Data Warehouse.

After more than 27500 orbits of the earth, the spacecraft continues to function nominally. It switches between high power telemetry when in daylight to low power telemetry and transponder when in eclipse.

The mission was developed by the Mohammed bin Rashid Space Centre (MBRSC) and American University of Sharjah (AUS). The UAE's first Nanosatellite was developed by Emirati engineering students from AUS under the supervision of a team of engineers and specialists from MBRSC within the framework of a partnership between the two entities, aiming to provide hands-on experience to engineering students on satellite manufacturing.

[ANS thanks AMSAT-UK for the above information]

URESAT-1 -- A Chess-Playing Ham Radio Satellite

The Unión de Radioaficionados Españoles reports intensive work is underway to make URESAT-1 available before the end of the year. If all goes according to plan, URESAT-1 will launch aboard a SpaceX Falcon-9 rocket from Cape Canaveral in October 2022.

A translation of the post by Spain's national amateur radio society URE says: URESAT-1 is based on the architecture used in the GENESIS, EASAT-2 and HADES missions but will include significant improvements, such as a 32-bit computer compared to the 8-bit computers of the previous satellites and improvements in the mechanisms of deployment of antennas and batteries.

As for its functionalities, it will have a VHF / UHF FM repeater and FSK frames, like its predecessors. This will allow voice QSOs and digipeating of AX.25 and APRS frames.

The payload is not yet defined, but it could be the same SSTV camera that flies in HADES, a thruster or some kind of experiment. Talks with universities and companies and is expected to be closed in the coming weeks.

One of the projects that is confirmed is a chess game that will allow radio amateurs to play having as an opponent the on-board computer sending FSK frames with the movements, to which the on-board computer will answer in its telemetry. Several radio amateurs are working on the project and if it is completed by the time the satellite is due to be delivered, it will be included.

The expected orbital altitude is around 525 km and the inclination will be polar, probably around 97 degrees, which would place it in the same orbital plane as its companions EASAT-2 and Hades.

URE has created a blog in WordPress where the status of the project will be reported, including details of the functionalities and technicians.

The blog can be found here https://uresat.ure.es/

[ANS thanks Southgate ARC for the above information]

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AMSAT, a portion of the proceeds goes towards
Keeping Amateur Radio in Space.
https://amsat.org/product-category/hardware/

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[ANS thanks Ray Hoad, WA5QGD, AMSAT Orbital Elements Manager, for the above information]

Message to US Educators: ARISS Contact Opportunity

Call for Proposals: New Proposal Window is February 21, 2022 to March 31, 2022

February 16, 2022 – The Amateur Radio on the International Space Station (ARISS) Program is seeking formal and informal education institutions and organizations, individually or working together, to host an Amateur Radio contact with a crew member on board the ISS. ARISS anticipates that the contact would be held between January 1, 2023 and June 30, 2023. Crew scheduling and ISS orbits will determine the exact contact dates. To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.
The deadline to submit a proposal is March 31, 2022

Proposal information and more details such as expectations, proposal guidelines and the proposal form can be found at https://ariss-usa.org/hosting-an-ariss-contact-in-the-usa/.

An ARISS Introductory Webinar session will be held on March 3, 2022, at 8 PM ET. The Eventbrite link to sign up is: https://ariss-proposal-webinar-spring-2022.eventbrite.com

The Opportunity

Crew members aboard the International Space Station will participate in scheduled Amateur Radio contacts. These radio contacts are approximately 10 minutes in length and allow students to interact with the astronauts through a question-and-answer session.

An ARISS contact is a voice-only communication opportunity via Amateur Radio between astronauts and cosmonauts aboard the space station and classrooms and communities. ARISS contacts afford education audiences the opportunity to learn firsthand from astronauts what it is like to live and work in space and to learn about space research conducted on the ISS. Students also will have an opportunity to learn about satellite communication, wireless technology, and radio science. Because of the nature of human spaceflight and the complexity of scheduling activities aboard the ISS, organizations must demonstrate flexibility to accommodate changes in dates and times of the radio contact.

Amateur Radio organizations around the world with the support of NASA and space agencies in Russia, Canada, Japan and Europe present educational organizations with this opportunity. The ham radio organizations' volunteer efforts provide the equipment and operational support to enable communication between crew on the ISS and students around the world using Amateur Radio.

Please direct any questions to ariss.us.education(a)gmail.com

(ANS thanks Dave Jordan, AA4KN, ARISS PR Team, for the above information)

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with

astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

Recently completed:
FH Aachen, University of Applied Sciences, Aachen, Germany, direct via DLØFHA with crewmember is Matthias Maurer, KI5KFH, using ISS callsign NA1SS. Contact was successful: Mon 2022-02-14 11:40:36 UTC 85 deg.
Congratulations to the FH Aachen, University of Applied Sciences students and Matthias!

Upcoming contacts:
Erasmus-Gymnasium Denzlingen, Denzlingen, Germany AND Goethe-Gymnasium, Freiburg, Germany, Direct via DN1EME
The ISS callsign is presently scheduled to be DPØISS
The scheduled crewmember is Matthias Maurer, KI5KFH
Contact is go for: Tue 2022-02-22 10:05:11 UTC 53 deg

Sussex County Charter School for Technology, Sparta, NJ, direct via KD2YAQ
The ISS callsign is presently scheduled to be NA1SS
The scheduled crewmember is Mark Vande Hei, KG5GNP
Contact is go for: Wed 2022-02-23 15:31:11 UTC 74 deg
Watch for Livestream at: https://youtu.be/U-gPHjI-2JY

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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satellites. Awards are available (see QRZ.com for details). For more details on the event, see: http://fmre90.puebladx.org

Please submit any additions or corrections to Ke0pbr (at) gmail.com

[ANS thanks Paul Overn, KE0PBR, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

+ CubeSat Developers Workshop
April 26-28, 2022
San Luis Obispo, CA

+ Hamvention 2022
May 20, 2022 to May 22, 2022
Greene County Fairgrounds and Expo Center
210 Fairground Road
Xenia, Ohio 45385
https://www.hamvention.org

+ 2022 Rocky Mountain ARRL Division Convention
October 7, 2022 - October 9, 2022
Event Center at Archer
3921 Archer Pkwy
Cheyenne, Wyoming 82007
https://wyhamcon.org/site

[ANS thanks Paul Overn, KE0PBR, AMSAT Events page manager, for the above information]

Satellite Shorts From All Over

+ AMSAT regrets to report the passing of Roy Welch, W0SL. Roy was very active on the satellites and wrote the ORBITS III tracking program. He was instrumental in placing a station in the St. Louis Science Center during the Soviet Space exhibit from mid 1992 to January of 1993. One memorable event during the exhibit was a contact between General Tom Stafford, Commander of the Apollo-Soyuz mission and the cosmonauts on board MIR. Roy is pictured at the station on the cover of the February 1993 issue of QST. (ANS thanks Mike Koenig, N0PFF, for the above information)

+ Two days after launching from Kazakhstan, a Russian Progress cargo freighter docked with the International Space Station on autopilot Thursday, Feb. 16, with a fresh delivery of food, crew supplies, experiments, and CubeSats that will be released outside the complex on a future spacewalk. Roscosmos, Russia’s space agency, said the Progress MS-19 spacecraft delivered around 5,562 pounds (2,523 kilograms) of supplies to the station. The arrival of Progress MS-19 at the station marked the first docking at the orbiting outpost this year. Teams at Wallops Island, Virginia are preparing for launch of a Cygnus cargo ship Saturday, Feb. 19 on a commercial Antares rocket. If that launch occurs on time, the Cygnus spacecraft is scheduled to arrive at the station Monday, Feb. 21. (ANS thanks Spaceflight Now for the above information)

+ SpaceX is prepared to shift testing of its Starship next-generation

launch vehicle from Texas to Florida if there are extended delays in an ongoing environmental review, company founder and chief executive Elon Musk said Feb. 10. In a long-awaited, and long-delayed, update about development of Starship at the company's Boca Chica, Texas, test site, Musk said he thought the Federal Aviation Administration would complete an environmental review and award SpaceX a launch license for Starship launches as soon as March. One potential outcome of that review, though, is to perform a more rigorous environmental impact statement (EIS) that could take months. (ANS thanks Spaceflight Now for the above information)

+ Astronomers have identified a Chinese rocket booster as an object on a trajectory to strike the Moon on March 4. The Chinese Chang'e 5-T1 mission launched in October 2014 on a Long March 3C rocket. This lunar mission sent a small spacecraft to the Moon as a precursor test for an eventual lunar sample return mission. The launch time and lunar trajectory are almost an exact match for the orbit of the object that will hit the Moon in March. "In a sense, this remains 'circumstantial' evidence," Bill Gray, who writes the widely used Project Pluto software to track near-Earth objects, wrote. "But I would regard it as fairly convincing evidence. So I am persuaded that the object about to hit the moon on 2022 Mar 4 at 12:25 UTC is actually the Chang'e 5-T1 rocket stage." (ANS thanks ARS Technica for the above information)

+ A company called Halibut Electronics has announced plans to produce and market a Satellite Optimized Amateur Radio (SOAR) rig. Video announcement at https://electronics.halibut.com/ (ANS thanks Halibut Electronics for the above information)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, K0JM
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